# Andrew Hamilton, RN, BSN, MS

## AllianceChicago
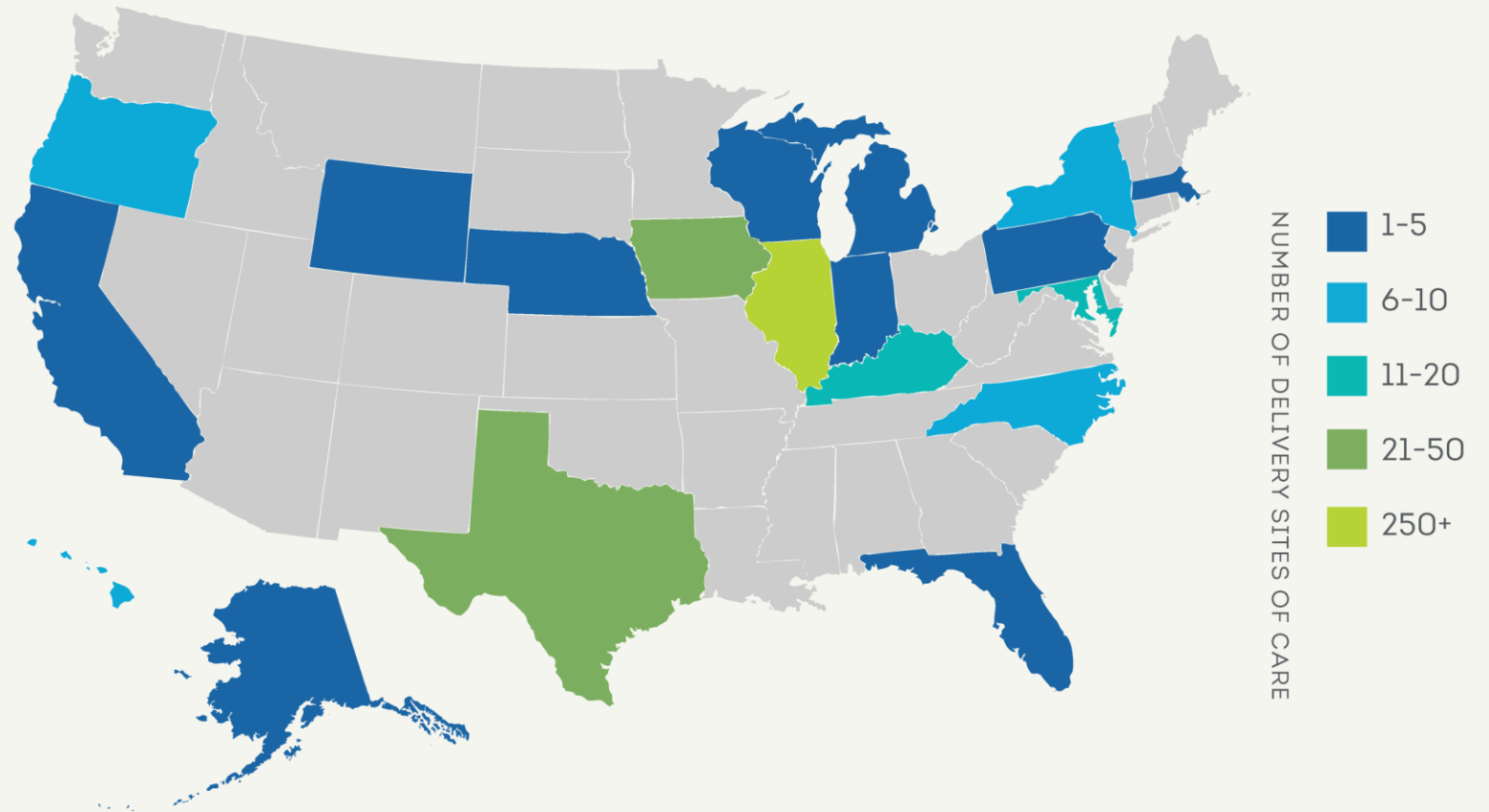
# AllianceChicago Network

**72** Safety-net Organizations

**400+** Delivery Sites of Care

Providing Services in **19** States

**3.6+ Million** Unique Patients

NUMBER OF DELIVERY SITES OF CARE

- 1-5
- 6-10
- 11-20
- 21-50
- 250+

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# Our Mission

To improve personal, community, and public health through innovative collaboration.

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# What We Do

## Health Care Collaboration

Hosted over **50** virtual events for learning and best practice sharing

Broadcasted our first virtual conference with **46** educational sessions, in partnership with Health Choice Network

Led a large-scale **7**-Health Center Network cohort survey to initiate the ARCH Collaborative to improve use and satisfaction of the EHR

## Health Information Technology

Developed **396** Clinical Content updates to athenaPractice

Maintained an average EHR hosted uptime of **100%**

Captured **3,707,443** unique patient lives from **35** health centers

## Health Research & Education

Led **43** active research projects

Engaged **32** health centers in research

Published **12** research manuscripts

Disseminated research findings through **12** presentations

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# 5 Things we know about Health Equity

- Health Equity is influenced by the design of policies & the implementation of program/services

- Medical Care is insufficient for ensuring better health

- New Payment Models are prompting interest in the role of SDOH

- Frameworks for integrating social care into healthcare are emerging

- Health Information Technology adoption and standards are critical to support the integration of social care

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# 5 Things we need to learn

- How do we collect and analyze comprehensive health equity related data to inform the design and delivery of health & social care

- What (new) data and technology solutions are needed – EHRs are necessary but not sufficient

- How to build multisector partnerships for data sharing

- How to prioritize and integrate intersectoral interventions necessary to positively impact Health Equity

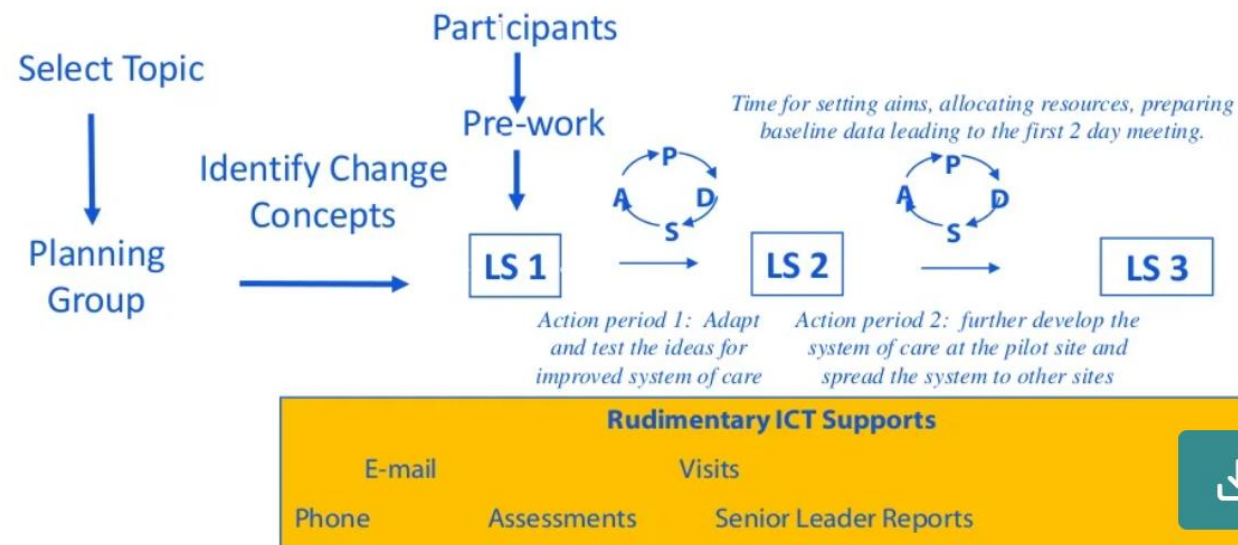- How to intervene without "medicalizing" SDOH

# Learning Health System
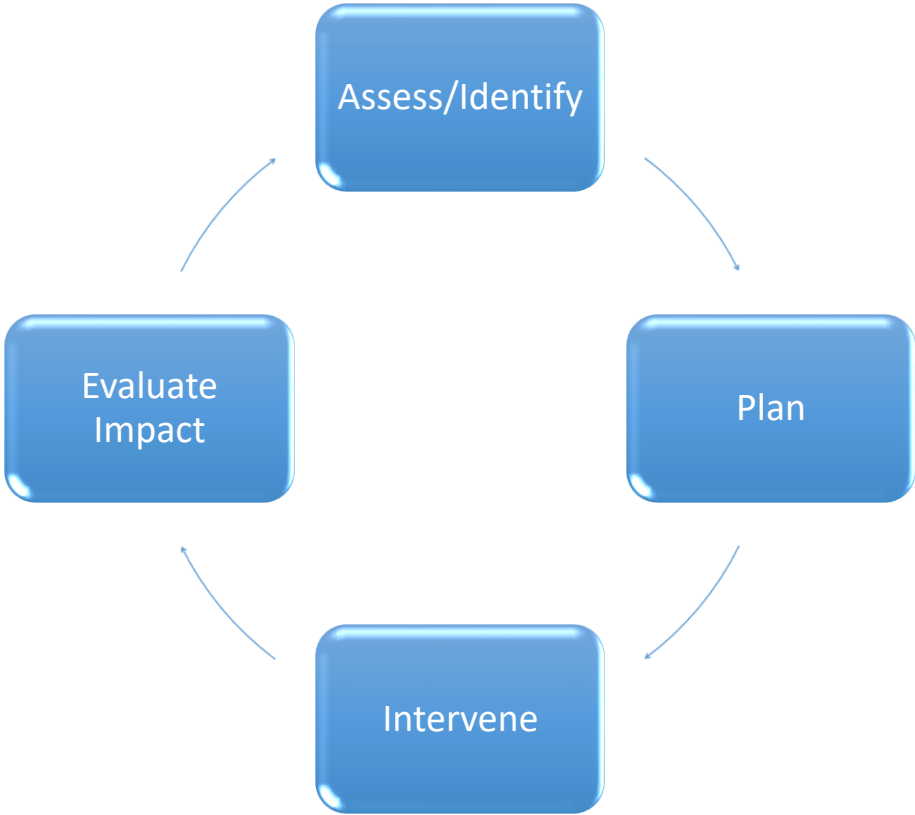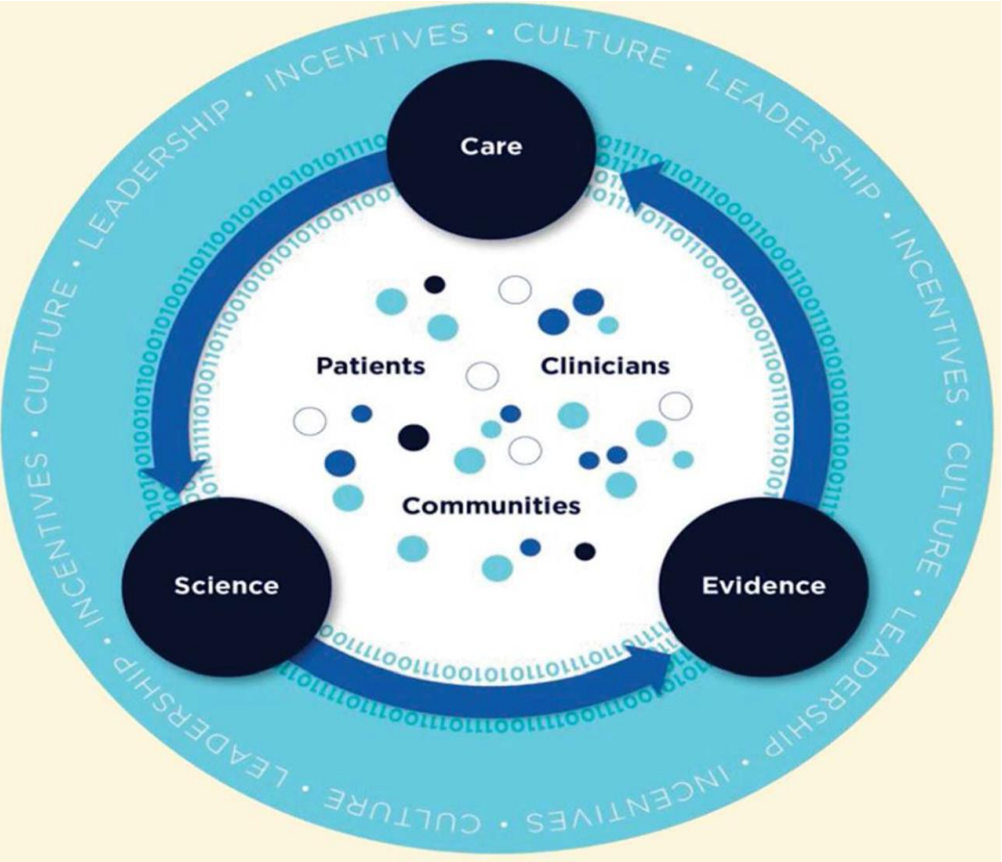
# Assess/Identify

- Patient reported information is highly valuable, however difficult to gather (time/effort to collect, data standards, availability)

- Many data collection efforts focus on patients that present for care and frequently overlook those that are "healthy"

- Data standards have been developed (and  more are under development) for SDOHs, however there are heterogenous and sometimes conflicting policy & regulatory standards related to the collection and use of SDOH data

- Physical, environment and behavioral factors have a significant impact on outcomes, however current assessment efforts are mostly focused on understanding social factors
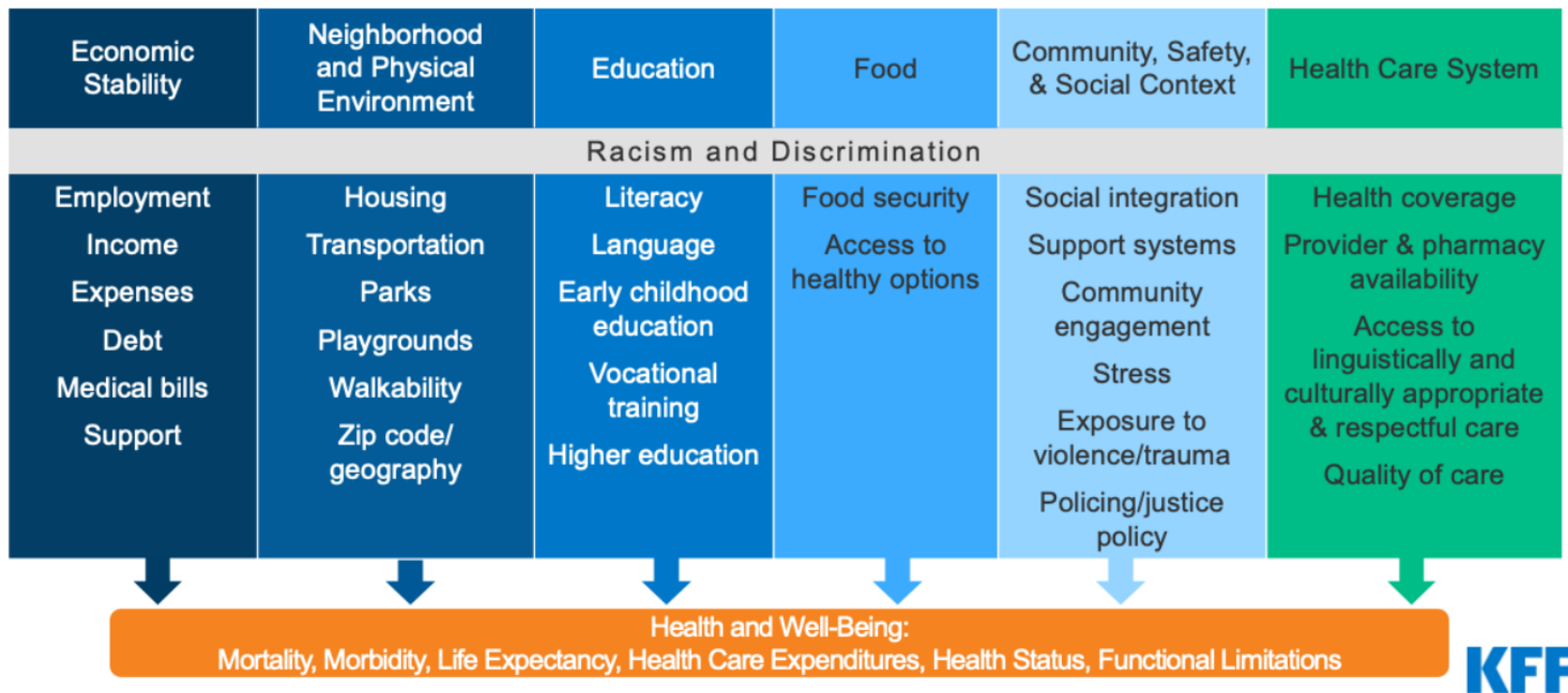
# CHCs & Health Disparities Collaborative

**HRSA Health Disparities Collaboratives added ICT support to learning process – as key needed infrastructure (1998)**

Select Topic

Participants

Planning Group

Identify Change Concepts

Pre-work

*Time for setting aims, allocating resources, preparing baseline data leading to the first 2 day meeting.*

LS 1 → LS 2 → LS 3

*Action period 1: Adapt and test the ideas for improved system of care*

*Action period 2: further develop the system of care at the pilot site and spread the system to other sites*

**Rudimentary ICT Supports**

E-mail — Visits

Phone — Assessments — Senior Leader Reports

CHCs should develop an approach to assess patients for social care needs and implement "enabling services" to mitigate social and economic risk impacting health outcomes

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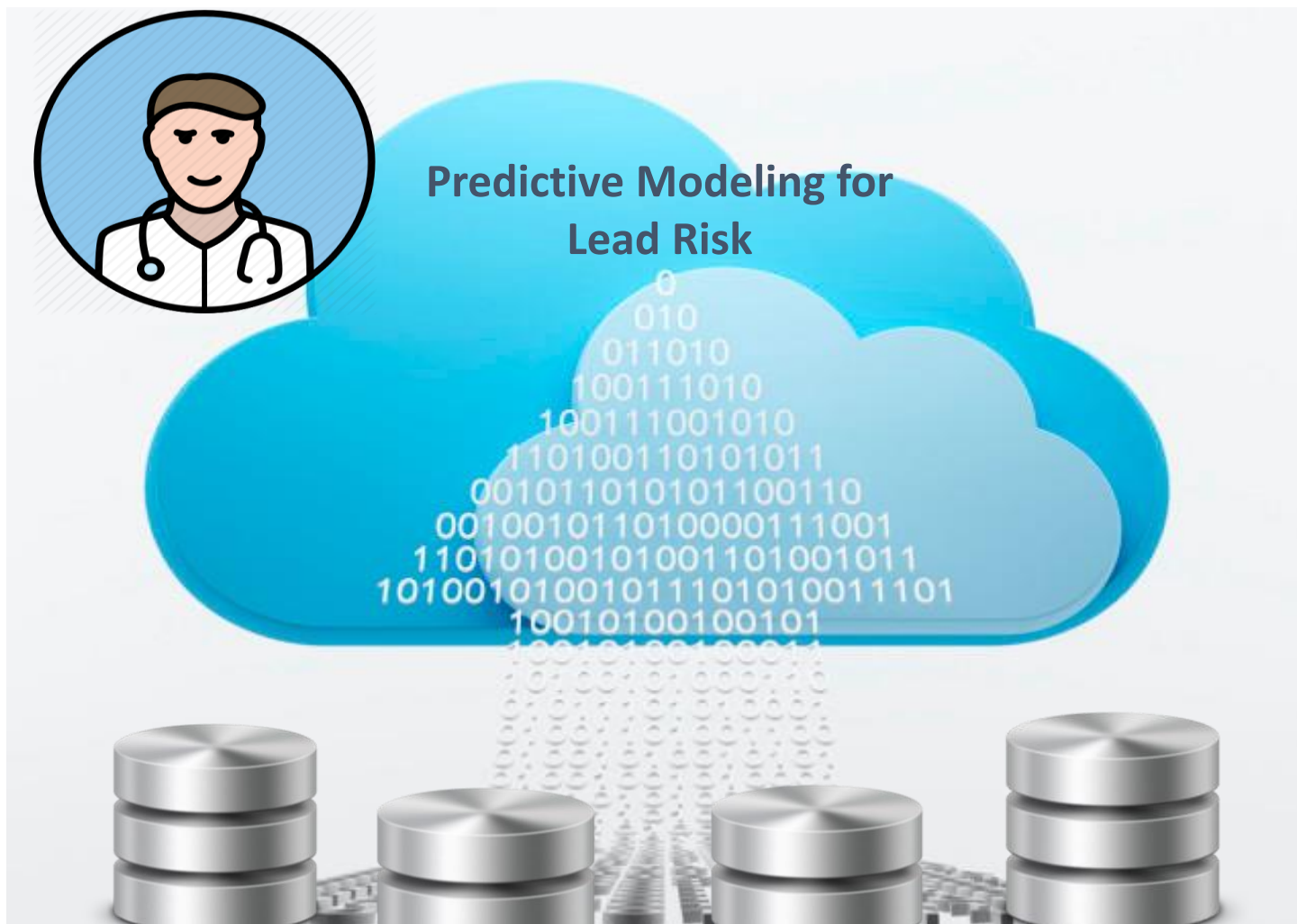Source: ReportFinal.edits.indd (aapcho.org)

# Health Disparities are Driven by Various Factors



Source: Disparities in Health and Health Care: 5 Key Questions and Answers | KFF

# Health Data Infrastructure

REACTIVE

PROACTIVE

CHILD POISONED

LEAD IDENTIFIED

REMEDIATION MITIGATION ABATEMENT

| | YEARS | RECORDS | VARIABLES | OWNER |
|---|---|---|---|---|
| **Blood Lead Level** | 1995 - Present | 2,700,000 | First name, last name, date of birth, address, blood lead level, sample type, sample date | CDPH Lead Program |
| **Home Inspection Records Summary** | 1989 -Present | 66,000 | Date of initial inspection, lead based paint hazard (yes/no), location of lead-based paint hazards (interior/exterior/both/), date complied, address | CDPH Lead Program |
| **Women, Infants and Children Demographics** | 1994 - Present | 180,000 | First name, last name, date of birth, address, sociodemographics | CDPH WIC Program |
| **Building Permits** | 2006 - Present | 400,000 | Address, issue date, permit type | Chicago Department of Buildings (Chicago Data Portal) |
| **Building Violations** | 2006 - Present | 1,500,000 | Address, violation Date, violation description, violation ordinance, inspection status | Chicago Department of Buildings (Chicago Data Portal) |
| **Building Footprints** | 2015 | 800,000 | Year of building construction, physical condition, number of units, stories (floors), vacancy status | Chicago Department of Buildings (Github) |
| **Cook County Assessor** | 2013 | 800,000 | Address, assessed property values, building classifications, building characteristics | 2014 Cook County Assessor |
| **Chicago Census Boundaries** | 2010 | 800 | Shape File | Chicago Data Portal |
| **Chicago Ward Boundaries** | 2015 | 50 | Shape File | Chicago Data Portal |
| **American Community Survey** | 2005 - 2014 | 800 | Census tract variables including socio-demographics, education, health insurance, home ownership. | US Census Bureau |
| **Frequently Occurring Surnames from Census** | 2000 | 150,000 | Census surname ethnicity | US Census Bureau |

# Clinical Decision Support Tool

- The predictive model is built into an EHR-based Clinical Decision Support (CDS) tool.
- The CDS can alert providers to the risk of lead exposure in a clinical setting.
- The tool provides recommendations regarding the need for visual home inspections and patient education on lead abatement strategies.

# SDOH Interoperability

- AllianceChicago to partner with HL7 to pilot the newly developed FHIR IG for SDOHs

- FHIR resources referenced in the SDOH Clinical Care FHIR IG STU1 that are not included in USCDI V2 and the US Core FHIR IG

  - Consent

  - Observation (Questionnaire Response)

  - Task

Source: HL7.FHIR.US.SDOH-CLINICALCARE\Home Page - FHIR v4.0.1

# Plan

- Prioritizing the information from screenings/assessments are difficult as patients often have multiple concerns

- A Patient-centered, multisector, sharable plan of care is essential

- A longitudinal, dynamic, and event driven plan of care is needed

- Multisector coordination of care planning are necessary including synchronization of other health-related public benefits programs (e.g., WIC, TANAF/SNAP)

- Expansion and harmonization of the IT Infrastructure among social care and community providers is necessary to support multisector data sharing and coordination of interventions

# Average # of SDOH Risks Per Patient



**Distribution of Patients by Total Number of SDH Risks Across PRAPARE Cohorts**

Legend: CA Cohort — TX Cohort — National Cohort

Mode in the National and TX Cohorts was 5 SDH risks

Mode in the CA Cohort was 8 SDH risks

23%

17%

11%

Y-axis: Percentage of Patients (0% – 25%)

X-axis: Number of SDH Risks Per Patient (0 – 22)
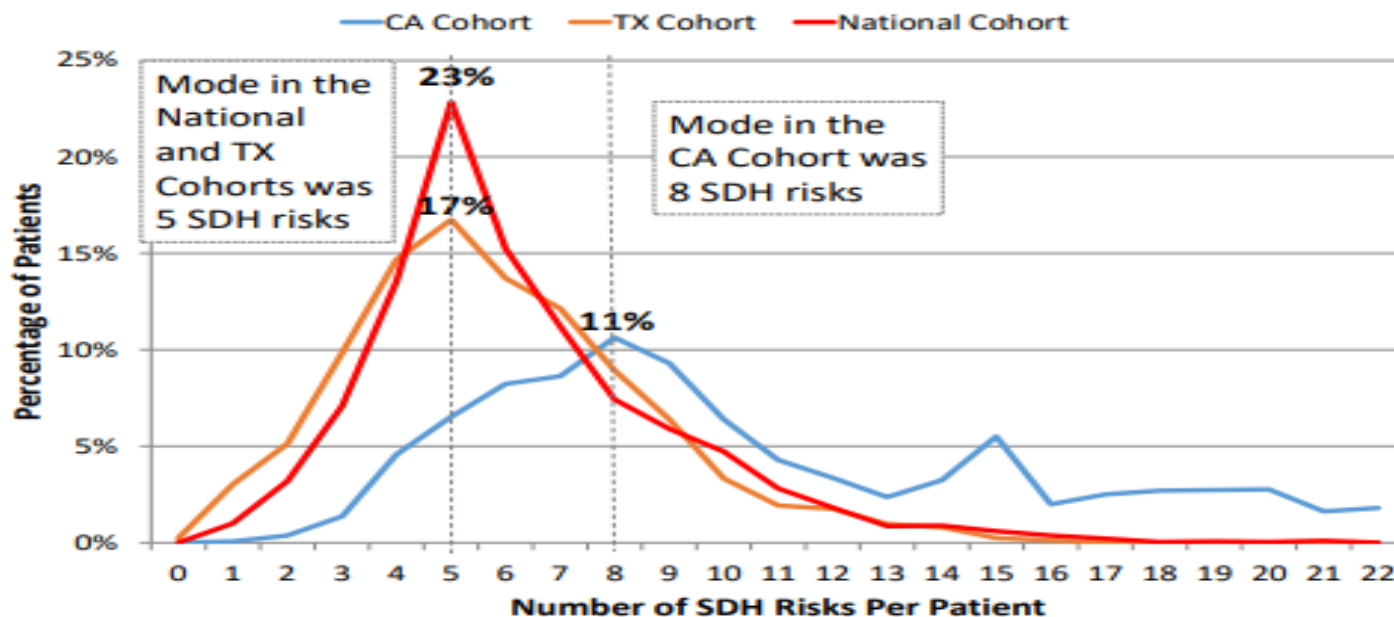
Source: Collecting SDOH in the Clinical Setting - Findings from the National PRAPARE Pilot 2019.pdf

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# Nursing Care Plan (NCP)

- The initial concept of the Nursing Care Plan was documented in the early 1930s by

- The proposed care plan included information on all of the family members, their current health status, socioeconomic information, housing conditions, nationality, as well as social and emotional health status

- Today five required components the NCP are 1) assessment, 2) expected outcomes, 3) interventions, 4) rationale for interventions and 5) evaluation of the impact/outcomes of the plan

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# FHIR Care Plan

## The 4 cornerstones of a care plan

Health Concern — relates to / addresses — Goal
Goal — references / directs — Intervention (care activity)
Milestone — references / attains
Intervention (care activity) — references (assess outcome) — Health Status Evaluation & Outcome
Goal — references — Health Status Evaluation & Outcome
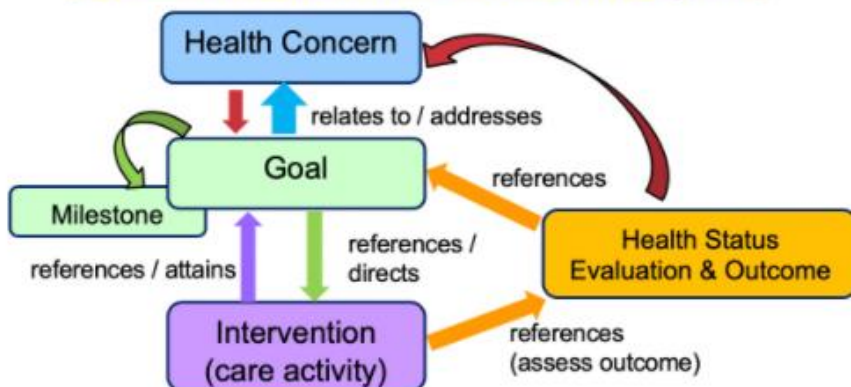
**Vision Today**

**Content:**
- Health concern(s)
- Health goal(s)
- Activity/intervention
- Progress/outcome
  and more ...

**Dynamic behavior:**
- Machine assisted care coordination

Corresponding FHIR standards:

- Care Plan

- Condition

- Goal

- Request-type resources
  - ServiceRequest, MedicationRequest, etc.

- Observation

- Questionnaire & Response

Source: HL7 Patient Care Work Group "Care Plan Standards Overview for ONC" April 19, 2017

# Intervene

- Lack information on which social care interventions have the most impact on health equity

- Broaden HIT policy and regulatory efforts to include the growing direct to consumer HIT marketplace

- Ensure direct to consumer HIT mediated program/services are credible and ethical

- Efforts to improve Digital Health Literacy are important to ensure equitable technology-enabled healthcare

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# Broadband Access

According to the tests collected,

**65% (1,362)**

of counties are **experiencing the internet at levels below the FCC's definition of broadband** including:

**77%**

of all **small** counties

**51.5%**

of **medium** counties

**19%**

of **large** counties

Source: https://www.naco.org/resources/featured/understanding-true-state-connectivity-america
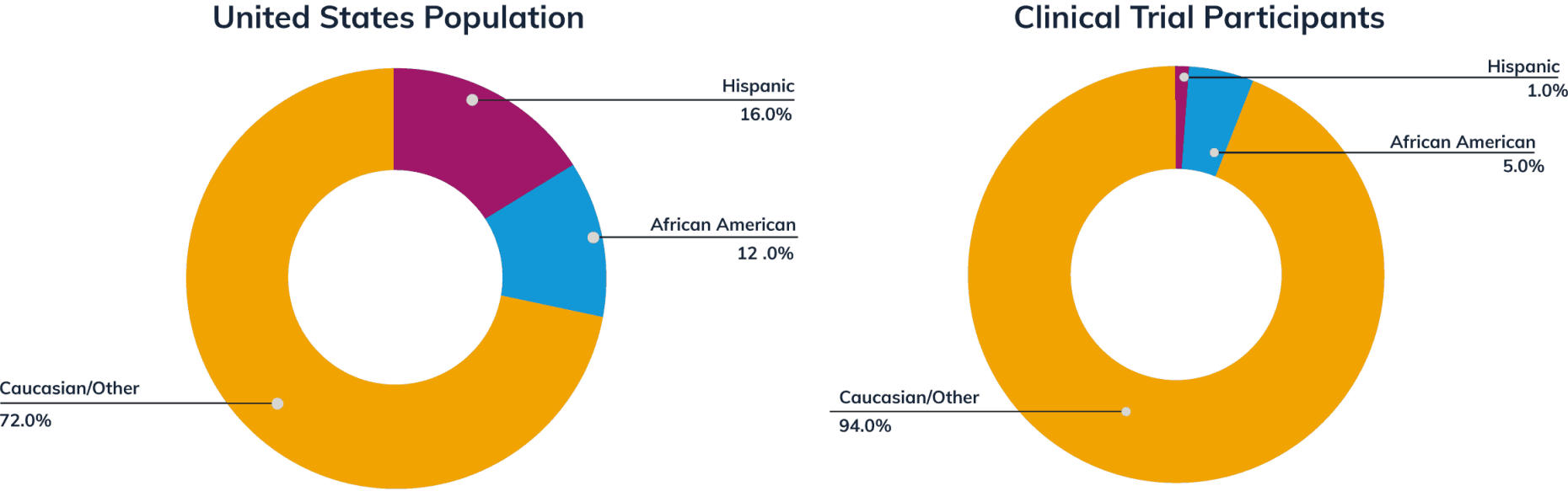
# Digital Health Literacy

The Infrastructure Investment and Jobs Act will improve access to broadband services, however the effort won't be effective if people can't use online application

- Invest in the development of  digital health tools that address the needs of diverse populations (age, races, ethnicity, gender, sexual orientation, primary language, and socioeconomic)

- Track digital health access and usage across sociodemographic populations

- Develop a robust infrastructure to support the use and optimization of digital health tools which account for varied digital literacy levels

- Support multidisciplinary workforce training programs that promote the use of digital health tools with diverse patients and consumers

# Evaluation

- Support investments in the further generation of scientific knowledge relative to digital health, health literacy, and multisector interventions

- Promote policy and standards to address bias in machine learning algorithms which can perpetuate health disparities

- Intensify efforts to increase the diversity of individuals involved in community engaged research and evaluation

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# Underrepresentation in Clinical Trials

## United States Population

Hispanic
16.0%

African American
12 .0%

Caucasian/Other
72.0%

## Clinical Trial Participants

Hispanic
1.0%

African American
5.0%

Caucasian/Other
94.0%

Source:
https://www.sciencedirect.com/science/article/pii/S0146280618301889

# Equitable Learning Health System

- Expand IT policy and standards to increase availability and use of heterogenous, multisectoral data

- Support the development of information technology to encourage the coordination of intersectoral care planning and intervention

- Promote the development of community-based training programs to optimize the use of digital health tools which account for varied digital literacy levels

- Intensify efforts to increase the diversity of individuals involved in community engaged research and evaluation

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